

Research on Risks and Countermeasures of Enterprise E-Commerce Transformation in the Cross-Border E-Commerce Environment

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Abstract. It is in this context that due to the speed of development of the global digital economy and its thorough integration with international trade, the conventional business models of foreign trade enterprises are challenged by an increase in competition in the market and reducing their resource integration capabilities. Enterprise managers must consider using cross-border e-commerce in bringing business change and ensuring steady expansion. One of the objectives of the given research is to develop a stepwise examination of the business performance of foreign trade enterprises, their perception of cross-border e-commerce, readiness to reform, and the primary limitations that they have to be disclosed in the context of their real activity, so that the central issues that enterprises have to face when adjusting to the international environment of e-commerce can be identified. It has been discovered that a lot of business ventures have blatant weakness in judgment of the market, operation management and use of digital tools. Simultaneously, they do not have a systematic knowledge on the fundamentals and working mechanisms of e-commerce across borders. They lack adequate talent pool, policy support and uneven distribution of resources which influences their transformation. The barriers and strategic requirements vary in enterprises of various sizes, level of development, and type of industry in the transformation process. According to these results, companies can raise the cross-border e-commerce awareness of their management and staff through systematic training and building a professional talent cultivation system, also enhancing policy and resource support systems, and streamlining business operations to alleviate transformation risks, this way contributing to the stable development and ensured long-term competitiveness in the complicated global digital trade environment.

1. Introduction

The rising labor costs, the increasing constraints on resources and the environment, and the growing uncertainty in the global political and economic environment, coupled with the continuous impact of public health events on supply chains and international trade, have put the business models of traditional foreign trade enterprises under tremendous pressure. Recent developments have encouraged company executives to rethink how they run their businesses. By adopting international online trading platforms, firms aim to grow steadily and secure a lasting presence in

global markets. Small and medium-sized exporters occupy a vital role in worldwide commerce, helping to boost market activity, restructure trade patterns, and advance economic progress. At the same time, these firms often struggle with limited financial resources, technological tools, managerial know-how, and brand recognition, leaving them exposed to external pressures. Moving toward digital cross-border sales channels can improve their ability to compete, stabilize their operations, and support ongoing growth. However, there is still insufficient insight into the plans, operational approaches, and practical difficulties these companies face when implementing such changes. Furthermore, there is a lack of empirical research based on large-scale field surveys and in-depth enterprise interviews, resulting in a limited understanding of enterprise transformation paths, potential risks, and response strategies. Based on this research gap, this study takes foreign trade enterprises as the core, conducts a comprehensive analysis from the aspects of enterprise operating conditions, cross-border e-commerce awareness level, transformation motivation and major obstacles faced through systematic investigation and in-depth interviews, aiming to reveal the key challenges and driving factors encountered by enterprises in the transformation process, and puts forward policy and management suggestions with strong operability and practical guiding significance, in order to provide scientific basis and practical reference for small and medium-sized enterprises to achieve stable development, optimize traditional trade models and enhance long-term competitiveness in the global digital trade environment.

2. Review of related research

This complexity has received extensive attention and multi-angle analysis in existing research. H Pan pointed out through research that when enterprises conduct business interactions in cross-border business networks, management must comprehensively evaluate the degree of technology adoption, the completeness of network infrastructure, the scale of the target market, the stability of the policy environment, the intensity of competitive pressure, and the quality of human capital. The interaction of these factors directly determines the strategic judgment ability and overall competitive advantage of start-up global enterprises in cross-border expansion [1]. D Tang's research holds that cross-border e-commerce live streaming is profoundly changing the way enterprises communicate with international consumers. Integrating innovative and entrepreneurial thinking into vocational education courses can effectively enhance students' digital capabilities and entrepreneurial qualities, thereby cultivating compound talents for enterprises who can adapt to the global digital market and the constantly changing business environment [2]. TA Quan's research shows that in the face of the high-demand European market, Vietnamese agricultural products have huge development potential, but a large number of enterprises still rely on the traditional export model[3]. AW Fodouop Kouam, through empirical research on small and medium-sized cross-border e-commerce enterprises in China, found that these enterprises generally faced multiple challenges such as financial pressure, marketing obstacles, logistics delays and unstable supply chains during the epidemic. However, by adopting digital technology to improve operational efficiency, optimize supply chain structure, apply online marketing methods and strengthen customer service management, enterprises have achieved digital transformation of business models and explored new sustainable operation paths[4]. F Li analyzed the cross-border dual-channel supply chain consisting of domestic manufacturers and overseas retailers. He found that the government's export tax rebate policy and import tariff level not only directly affect price formation and market demand, but also indirectly affect consumer purchasing behavior through inventory management. He used the Poisson random demand and Stackelberg game models to reveal the complexity of the interaction between enterprises and retailers and its impact on order volume and profit[5]. R Su proposed in his research that the use of blockchain and smart contract technology

can effectively solve the problems of low efficiency, high fraud risk and traceability in cross-border e-commerce transactions. The big data risk identification model and alliance chain distributed architecture he constructed can achieve traceability and tamper-proof transaction information, and optimize logistics, customs clearance and payment processes through the automated execution of business logic by smart contracts, thereby significantly improving enterprise transaction efficiency and operational security [6]. Engidaw Abriham Ebabu used the B-SLR method to systematically analyze the evolution of China's cross-border economic corridor trade under the legal framework of the countries along the Belt and Road Initiative from 2010 to 2024. He pointed out that regulatory differences, cultural differences and infrastructure imbalances are the main obstacles in the internationalization process of enterprises. At the same time, digital transformation and regional cooperation have created important development opportunities for enterprises. The conceptual framework he proposed provides theoretical guidance for policy formulation and corporate strategy [7]. LI Jianbin's research shows that the cross-border e-commerce platform financing model may cause price information leakage risks while alleviating the problem of capital shortage for small and medium-sized enterprises. He effectively protected the preferential wholesale price interests of retailers by designing a price protection strategy, and achieved a win-win effect between the platform and enterprises within a certain loan interest rate range, providing a practical and feasible operational method for enterprises to avoid financial risks [8].

Existing research generally holds that cross-border e-commerce has expanded rapidly under the combined effect of the continuous advancement of information and communication technology, the continuous improvement of Internet infrastructure, and the profound impact of COVID-19 on global trade methods. The development of cross-border platforms and the popularization of digital payment tools have prompted more international sellers to enter the online market and have driven the retail industry to generate new growth momentum in terms of product innovation, user experience and operation methods. Although enterprises have gained new opportunity resources in the technological policy environment, However, in the actual operation process, it still needs to confront multiple risks such as fluctuations in market demand, a fragile supply chain system, and insufficient digital capabilities.

The analysis of relevant research at the level of small and medium-sized enterprises further indicates that factors such as financial pressure caused by the epidemic, blocked marketing channels, and unstable international logistics systems have had a significant impact on cross-border e-commerce enterprises. Yao et al.[9] proposed after conducting multi-source data analysis on 104 Chinese cross-border e-commerce small and medium-sized enterprises, Under the impact of the epidemic, enterprises have gradually formed diversified response strategies and utilized the internal driving force of the stressful environment to promote digital transformation. This change reflects the process by which enterprises enhance operational resilience through strategic adjustments when resources are limited. Fodouop Kouam [10] further pointed out that enterprises gradually established new competitive advantages through technological upgrades, supply chain structure adjustments, and the construction of online marketing systems before and after the epidemic, and improved operational stability and market adaptability through continuous digital deployment. Existing research also provides theoretical support at the e-commerce architecture level. The framework of e-commerce architecture put forward by Trad et al [11]. depicts the systematized courses that businesses should adopt regarding the campaigns of digital change based on the lenses of system modeling, module configuration and management oversight. This approach focuses on the value of system design in the long-term growth of enterprises and building of digital capabilities. The study by Wang et al. will be used to examine how a rural setting such as the Taobao Village located in Zhejiang Province has had its economic and social structure redefined because of e-commerce[12]. The study established that with the penetration of e-commerce activities into the local societies,

there have been major transformations in traditional modes of livelihood, networks of social relations, and cultural ecosystems. This implies that the e-commerce revolution can facilitate social and economic restructuring at a bigger scope.

3. Research Data Results and Analysis

3.1 Survey Design and Sample Characteristics Analysis

The senior executives and actual responsible persons of the participating enterprises undertake the core decision-making responsibilities, directly responsible for the formulation of enterprise strategies and daily operation management. Their feedback not only demonstrates their understanding of business model innovation and cross-border e-commerce practices, but also provides the real situation of the enterprise's implementation experience, strategic judgment and the problems faced.

There are differences among enterprises in terms of operational foundation, development stage and market positioning. These differences are manifested in their varying levels of understanding of cross-border e-commerce, development motivations and willingness to transform. Figure 1 shows that small and micro enterprises dominate in terms of quantity, among which micro enterprises account for the largest proportion, reflecting the wide distribution of enterprises in the market. The differences among enterprises in terms of age, annual sales volume, development stage and industry type provide a multi-dimensional analysis basis for the transformation of cross-border e-commerce. Figure 2 shows that enterprises with rich business experience have advantages in market adaptability and resource allocation, while emerging enterprises demonstrate stronger innovation drive and willingness to transform. Figure 3 shows that enterprises with different annual sales volumes have significant differences in market expansion capabilities and resource utilization. High-selling enterprises have more funds and operational space, while small and medium-sized enterprises face resource constraints and market pressure. Figure 4 shows that the proportion of enterprises in the growth stage is the largest. They are more flexible in strategic adjustment and innovation practices. Early-stage and mature enterprises present different characteristics in terms of innovation drive and stability. Enterprises in the transformation, adjustment or decline stage face different challenges in responding to market changes and risk tolerance. Figure 5 shows the industry distribution of enterprises. The proportion of labor-intensive, technology-intensive and capital-intensive enterprises is relatively high, while the proportion of resource-intensive enterprises is relatively low.

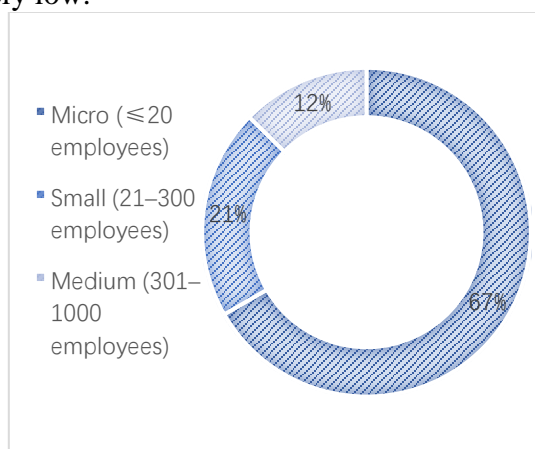


Figure 1. Company size

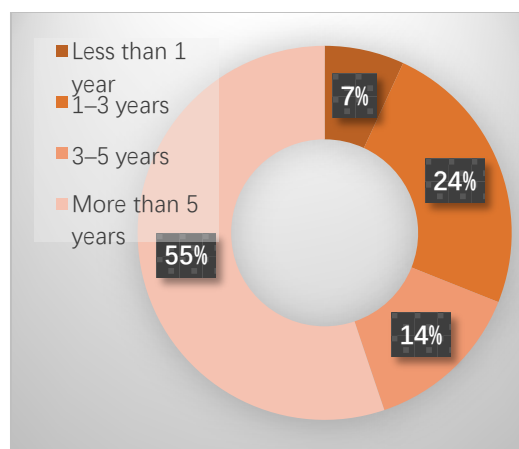


Figure 2. Duration

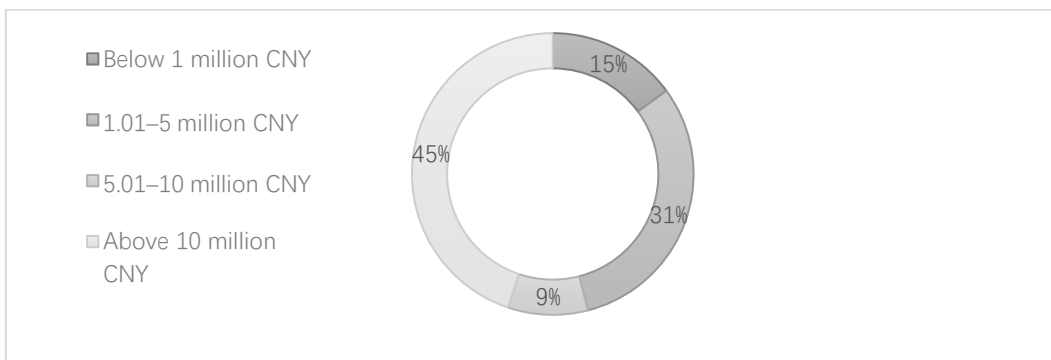


Figure 3. Annual sales

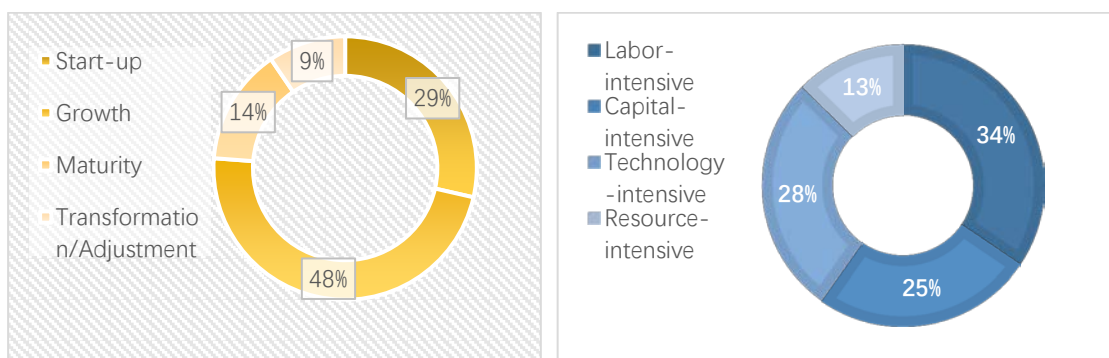


Figure 4. Development Stages

Figure 5. Industry Types

3.2 Analysis of Business Difficulties and Transformation Perceptions

In the feedback, enterprise managers describe the operational status in a cautious tone, which reflects the limited capabilities of the enterprise in market expansion and risk response, and also shows that the uncertainty of the overall business environment has had a significant impact on the psychology of enterprises. Many enterprises regard fierce market competition and the difficulty in acquiring new customers as their main problems. Meanwhile, the rising costs of raw materials, labor and space have further compressed the survival space of enterprises. The instability of supply chains and labor shortages also occur frequently, while cross-border payment and settlement mechanisms have received less attention. This indicates that when enterprises develop cross-border business, they rely more on external institutional and policy environments, while their internal management capabilities and technical support remain insufficient.

There is a significant gap between the transformation demands of enterprises and their actual operational capabilities. Most enterprises believe that expanding cross-border business is very necessary and show a positive willingness, but in the actual implementation, they are restricted by problems such as insufficient talents, limited institutional support, lack of systematic training, imperfect customs clearance and logistics processes, and insufficient funds. This gap not only affects the efficiency of enterprise transformation, but also leads to enterprises of different scales, industry types and development stages showing different characteristics when choosing transformation paths, thereby influencing the overall speed and effect of transformation advancement.

According to the analysis in Figures 6 and 7, the main risks that enterprises face in the transformation to cross-border e-commerce are concentrated in three aspects: insufficient talent supply, inadequate institutional guarantee and imperfect external support environment. The

interaction of these factors makes the transformation process full of uncertainties. Enterprises need to make simultaneous efforts in internal capacity building and the optimization of external support systems. This approach allows them to address the challenges that arise during the shift, minimize possible setbacks, and steadily build enduring growth and lasting advantages within the global online trade context.

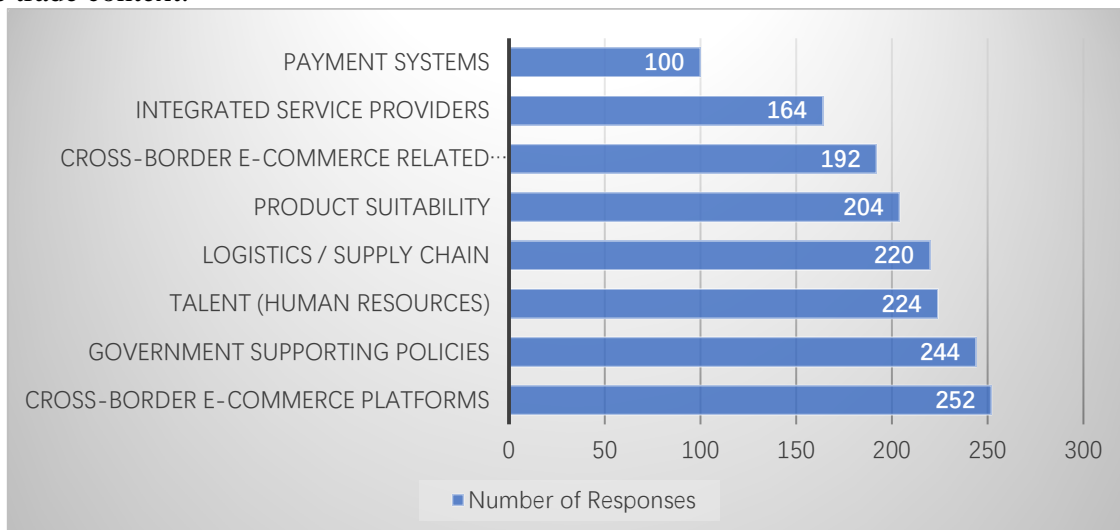


Figure 6. Cognition of Key Elements for Cross-border E-commerce

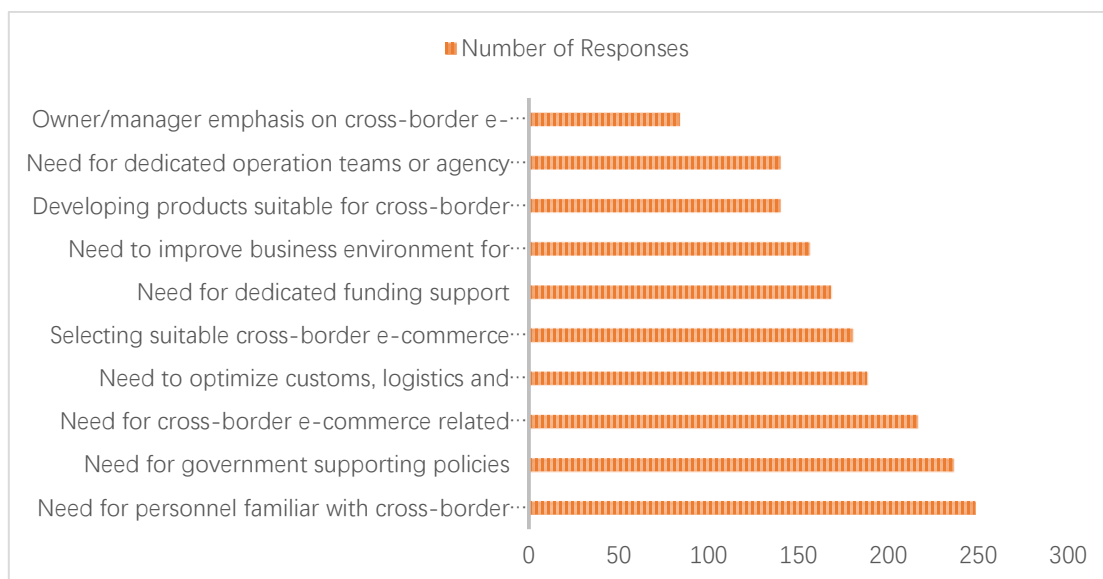


Figure 7. Difficulties in the Transformation to Cross-border E-commerce

4. Risks of Enterprise E-commerce Transformation in the Cross-border E-commerce Environment

The core risks that enterprises face in the transformation to cross-border e-commerce can be analyzed and sorted out from three aspects: strategic decision-making, operational execution, and external ecological support. Deviations in formulating strategic plans and allocating resources will directly affect the scientific nature of the transformation path and the efficiency of resource utilization, and determine whether the transformation can succeed. Many enterprises only view cross-border e-commerce as the operation of opening a platform account or launching a single

product, neglecting the complex strategic design, process coordination and system requirements in the entire system. This one-sided understanding can easily lead the management to make mistakes in market positioning, brand building and target customer selection, causing the enterprise to lack effective arrangements in the use of funds, time and human resources, thereby reducing the input-output efficiency and weakening the flexibility of strategic execution. At the same time, enterprises overly rely on external platforms and policies, which makes them lack the ability to respond quickly when facing market changes, policy adjustments and environmental uncertainties. The uneven distribution of internal resources has increased the risks of strategic decision-making. Enterprises invest more in hardware construction, platform entry and infrastructure development, but less in the recruitment of key talents, skills training, data analysis and market research. This not only weakens the sustainability of transformation, but may also lead to limited funds and unpredictable returns, restricting the long-term development and market competitiveness of enterprises.

When enterprises translate strategic decisions into concrete actions and enter the operational stage, operational execution risks become the core factor in measuring the effectiveness of transformation. Such risks mainly stem from insufficient talent reserves, imperfect business process design and weak internal management systems. When enterprises lack talents with capabilities in cross-border business operation, digital marketing, international logistics and customer service, the speed and direction of their transformation plans will be restricted, and they will encounter situations where they have the willingness to transform but are unable to effectively implement it. This not only increases the cost of trial and error and time consumption, but also affects the overall transformation efficiency and the effectiveness of resource utilization, while weakening the enterprise's competitiveness and long-term development potential in the international market. Cross-border e-commerce operations involve long chains such as marketing, transaction processing, payment and settlement, logistics and transportation, as well as customs and tax declaration. Any insufficiency in capacity or interruption in the process at any link will lead to the stagnation of the entire chain, manifested as rising logistics costs, extended delivery cycles, declining customer satisfaction, and increased transaction disputes. This not only affects the short-term profits of enterprises. It will also have a negative impact on the international reputation and long-term competitiveness of the enterprise.

The system supports risk reflection of the uncontrollable factors that enterprises face in the external environment and their restrictions on transformation. Such risks mainly stem from policy uncertainties, market fluctuations and the immaturity of the third-party service system. The development of cross-border e-commerce is highly dependent on stable trade policies, platform operation rules, tax systems and professional service systems. A lack of strategies to address fluctuations in the external environment can severely impact a company's existing strategies and operational models, leading to business disruptions and increased costs. Small and medium-sized foreign trade enterprises are highly dependent on third-party service institutions to obtain core support such as professional training, cross-border logistics coordination and compliance consultation during the process of cross-border e-commerce transformation. At present, the specialized services for small and medium-sized enterprises in the market not only lack high cost-effectiveness but also have uneven levels. This makes it difficult for enterprises to obtain continuous, reliable and systematic external support in actual operations. As a result, enterprises must independently complete various links in complex business processes. This situation not only significantly increases the threshold for transformation but also leads to extremely high uncertainties for enterprises in terms of strategic resource allocation, risk management, and strategic implementation efficiency, thereby further magnifying potential economic losses and management risks.

The risks faced by small and medium-sized foreign trade enterprises in the process of promoting

the transformation to cross-border e-commerce present highly systematic, interrelated and dynamically intertwined characteristics. Strategic decision-making risks affect whether the development direction of an enterprise is scientific and whether its strategic layout is reasonable. The operational execution risk determines the efficiency and actual effect of strategic implementation. The system supports risk restrictions on enterprises' capabilities in choosing development paths and adapting to the external environment. These three types of risks interact with each other, forming the overall risk pattern that enterprises face in the transformation to cross-border e-commerce, and have a significant impact on the long-term development capacity, resource utilization efficiency and international market competitiveness of enterprises.

Insufficient strategic understanding can lead to an unreasonable allocation of core position talents or even vacancies. Insufficient internal talent reserves and an imperfect external service system within an enterprise will increase operational execution risks, causing the enterprise to bear multiple risks during the transformation process. To scientifically understand and effectively respond to the risks of enterprise transformation, enterprises need to assess the intrinsic connections and interactions among strategic decisions, operational execution and system support from an overall and dynamic perspective, ensuring stable, efficient and sustainable development during the process of cross-border e-commerce transformation. A single measure cannot solve the problem. Enterprises must establish a coordinated, systematic and complete governance system, including strategic planning, internal capacity building and adaptability to the external environment.

5. Strategies and Recommendations for Enterprise E-commerce Transformation

Against the backdrop of the rapid development of global cross-border e-commerce, the core issue for small and medium-sized foreign trade enterprises to promote business transformation is to enhance their overall understanding of the cross-border business ecosystem. This understanding not only requires a grasp of international market dynamics but also familiarity with the operation mechanisms of cross-border trading platforms, supply chain management, payment and settlement processes, and logistics collaboration. Only when the management clearly masters these key links can they demonstrate initiative and foresight in strategic decision-making and achieve efficient and sustainable business expansion and resource allocation. Insufficient cognition can lead to inefficient resource allocation, passive operational decision-making and slow business expansion in enterprises. By providing diverse forms of education, hands-on experience, and networking opportunities, government agencies, trade organizations, international online trading platforms, and professional education providers can support companies in gradually understanding the essential principles and operational mechanisms of cross-border online business. This process strengthens their capacity to evaluate the need for transformation, anticipate possible challenges, and identify practical approaches, while also boosting their readiness and confidence to engage in international market expansion.

The pressures faced by enterprises include not only external pressures such as market competition, difficulties in customer development and fluctuations in the supply chain, but also internal resource pressures such as raw material procurement, labor costs and rent. The accumulation of these pressures restricts enterprises in resource allocation and strategic planning, making it difficult for them to balance daily operations and cross-border business expansion. As a result, enterprises exhibit passivity and caution during the transformation process. Therefore, policy support plays a significant role in alleviating the pressure on enterprises, reducing transformation costs, and guiding enterprises to enter cross-border markets. This restricts the enterprise's ability in business expansion, platform management and international market development. This can be achieved by formulating regional talent introduction policies, establishing talent flow mechanisms,

providing job incentives and supporting services to attract high-quality talents to join small and medium-sized enterprises, and enhancing the cross-border e-commerce operation capabilities of enterprise teams through systematic training and practical guidance. Enterprises should carry out specialized training based on their own business needs, covering cross-border marketing, platform operation, logistics management, payment settlement and risk control. At the same time, they should leverage universities, research institutions and third-party think tanks to provide strategic planning and business consultation, forming a talent cultivation ecosystem that integrates internal and external resources, gradually alleviating the problem of talent shortage, and improving operational efficiency and market competitiveness.

6. Conclusion and Outlook

With the rapid growth of global digital commerce, mid-sized and smaller export firms encounter a variety of difficulties while reshaping how they conduct business. The pressures of market development, customer retention, supply chain coordination and cost management directly affect the short-term operational performance and strategic decision-making efficiency of enterprises. Insufficient understanding of the core links of cross-border e-commerce by enterprises will lead to the inability of internal resource allocation to meet the actual operational needs, thereby increasing the uncertainty and potential risks of transformation. Insufficient talent reserves, inadequate institutional support and an imperfect training system further restrict enterprises' ability to implement strategies, resulting in a significant gap between their willingness to transform and their actual implementation capabilities. Enterprises of different scales, industries and development stages perform differently in this gap, which will affect their choices of transformation paths and speeds. If small and medium-sized foreign trade enterprises can establish a collaborative mechanism for internal capacity building and external resource integration in the future, and adopt comprehensive measures such as systematic talent cultivation, professional team building, business process optimization, policy guidance, supply chain support and market expansion, it will help reduce the resistance to transformation, mitigate risks, and enhance the adaptability and resilience of enterprises in the international market. The transformation of cross-border e-commerce not only helps enterprises expand their market share and enhance their profitability, but also serves as an important strategic support for promoting their long-term sustainable development and strengthening their international competitiveness.

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